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(FILE 'HOME' ENTERED AT 14:11:02 ON 30 SEP 2000)

L1 FILE 'REGISTRY' ENTERED AT 14:11:06 ON 30 SEP 2000  
382 (0<PB AND 95<CU)/MAC

L2 FILE 'HCA' ENTERED AT 14:12:05 ON 30 SEP 2000  
1088 L1  
L3 299 L2 AND (COPPER OR CU) AND (LEAD OR PB)  
L4 17 L3 AND HEAT? AND CAST?  
SELECT IPC  
L4 1 2 3 5 7 9 12 16  
L5 401696 E1-18

L6 FILE 'REGISTRY' ENTERED AT 14:21:51 ON 30 SEP 2000  
120 (0<PB<0.6 AND 99<CU)/MAC

L7 FILE 'HCA' ENTERED AT 14:22:53 ON 30 SEP 2000  
121 L6 AND (COPPER OR CU) AND (LEAD OR PB)  
L8 97 L7 AND PB  
SAVE L8 HCA/A  
L9 16 L8 AND CAST?  
SELECT L9 IPC 1 2 3 7 8 14  
L10 256238 E19-26  
E GUIXA JOSE/IN,AU  
L11 1 E2  
E GARCIA MIQUEL/IN,AU  
E GARCIA M/IN,AU  
L12 379 E4-12  
E ESPIELL FERRAN/IN,AU  
L13 27 E2-4  
E FERNANDEZ MIQUEL/IN,AU  
E ESPARDOUCER ARACELI/IN,AU  
L14 1 E2  
E SEGAMA MERCE/IN,AU  
E SEGAMA M/IN,AU  
E CHIMENOS J/IN,AU  
L15 10 E5  
L16 256652 L15 OR L14 OR L13 OR L12 OR L11 OR L10 OR L9  
L17 256645 L15 OR L14 OR L13 OR L12 OR L11 OR L10  
L18 407 L15 OR L14 OR L13 OR L12 OR L11  
L19 4 L18 AND (COPPER OR CU) AND (LEAD OR PB)

L20 FILE 'WPIDS' ENTERED AT 14:38:21 ON 30 SEP 2000  
193 L10 AND (COPPER OR CU) AND (LEAD OR PB) AND CAST?  
L21 0 L20 AND (HEAT? 20W CAST?)  
L22 74 L20 AND HEAT? AND CAST?

AN 129:164740 HCA  
TI Copper alloy articles having improved blanking workability for electric and electronic devices and their manufacture  
IN Eguchi, Tatsuhiko; Hirai, Takao; Kojima, Manabu  
PA Furukawa Electric Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	JP 10195562	A2	19980728	JP 1997-1802	19970109	
AB	The Cu alloy articles contain 0.002-0.5% of Pb, Bi, Ca, Sr, Ba, and/or Te. The following alloy articles contg. 0.002-0.5% of Pb, Bi, Ca, Sr, Ba, and/or Te are also claimed: (1) Cu-Zn alloys, (2) Cu-Zr alloys having Zr content 0.02-0.2%, (3) Cu-Sn alloys, (4) Cu-Sn-Ni alloys, (5) Cu-Sn-Ni-P alloys contg. Sn 1.5-2.5, Ni 0.1-0.3, and P .ltoreq.0.15%, (6) Cu-Fe alloys, (7) Cu-Fe-P alloys having Fe content 0.02-0.5% and P content 0.01-0.2%, (8) Cu-Fe-Zn-P alloys contg. Fe 1.0-2.6, Zn 0.05-2.0, and P 0.015-0.15%, (9) Cu-Cr alloys, or (10) Cu-Cr-Zr alloys. The title articles are manufd. by casting, hot-working, and cold-working the alloys having the above compns. at the following conditions: (a) cooling rate in casting .gtoreq.5.degree./s, (b) hot-working at 700-1000.degree., (c) rapid-cooling after hot-working at rate .gtoreq.10.degree./s, and (d) heating at 300-600.degree. for 30 s to 6 h during cold-working. The microalloying elements form compds. dispersed in the Cu matrixes, resulting in improved workability in blanking of the alloy articles.					

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(FILE 'HOME' ENTERED AT 14:11:02 ON 30 SEP 2000)

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L1 382 (0<PB AND 95<CU)/MAC

FILE 'HCA' ENTERED AT 14:12:05 ON 30 SEP 2000

L2 1088 L1

L3 299 L2 AND (COPPER OR CU) AND (LEAD OR PB)

L4 17 L3 AND HEAT? AND CAST?

AN 130:128649 HCA  
TI Rare earth-containing copper having high electric conductivity and its manufacture  
IN Li, RENCHUN; Chen, XINGUO; Liao, LEJIE; Yuan, JIANG  
PA Gannan Casting and Forging Plant, Jiangxi Province, Peop. Rep. China  
SO Faming Zhuanli Shengqing Gongkai Shuomingshu, 5 pp.  
CODEN: CNXXEV  
DT Patent  
LA Chinese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	CN 1121534	A	19960501	CN 1995-104151	19950427	
AB	The title Cu contains Cu .gtoreq.99.756, rare earth metals 0.09-0.15, and impurities Bi, Sb, As, and Sn .ltoreq.0.002, Fe, Pb, S and Zn 0.005, Ni .ltoreq.0.006, and O .ltoreq.0.060%. The Cu is manufd. by refining a mixt. of 70-80% electrolytic Cu and 20-30% red Cu in a reducing atm. with slagging first at 1150.degree. and then at 1200.degree. by using glass and chloride as flux, adding <b>preheated</b> rare earth alloy to the molten Cu by pressing, <b>casting</b> at 1150-1170.degree. in a mold <b>preheated</b> to 80-100.degree., and heat treating by holding at 800 .+- . 10.degree. for 1-1.5 h. The manufd. rare earth-contg. Cu has an elec. cond. 96-98% IACS, softening temp. .gtoreq.280.degree., and tensile strength 450 MPa.					

AN 129:7375 HCA  
TI Copper alloy sheets and their manufacture for electronic equipment  
IN Hirai, Takao; Eguchi, Tatsuhiko  
PA Furukawa Electric Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10110228	A2	19980428	JP 1997-129582	19970520
PRAI	JP 1996-214685		19960814		

AB The Cu alloy sheets contain Ni 0.4-4.0, Si 0.1-1.0, .gtoreq.1 of Zn 0.05-1.5, Mg 0.01-0.5, Mn 0.01-0.5, and Ag 0.001-0.3 but 0.001-1.5 as sum, .gtoreq.1 of Pb, Bi, In, Sb, Ca, Te, P, Ba, and rare earth element 0.002-0.2, and S and O<sub>2</sub> <0.005% each, and the size of Cu alloy crystd. materials or ppts. is <3 .mu.m while the grain size <10 .mu.m. Cu alloy having the above compn. is cast at a cooling rate of .gtoreq.5.degree./s to obtain ingots, heated to 800-950.degree., hot worked, quenched at .gtoreq.10.degree./s, and at least once cold rolled with heat treatment at 350-550.degree. for 10 min-24 h to obtain Cu alloy sheets suitable for making electronic equipment such as lead frame.

AN 124:349857 HCA  
TI **Copper** bearing alloy and manufacture of steel composite having  
this alloy  
IN Laschimke, Ralf; Burger, Maria  
PA Fuerstlich Hohenzollernsche Werke Laucherthal GmbH und Co., Germany  
SO Ger. Offen., 5 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	DE 4437565	A1	19960425	DE 1994-4437565	19941020	
AB	The <b>Cu</b> alloy contains <b>Pb</b> 0.15-25, Ni 0.5-4.5, and Si 0.1-1.5%; <b>Pb</b> 10-20, Ni 2-4.5, and Si 0.5-1.2%; or <b>Pb</b> 15-18, Ni 3-4.5, and Si 1%. The Ni:Si wt. ratio in the alloy is 4-4.5 and esp. 4.2. The alloy is centrifugally <b>cast</b> on steel blank inductively <b>heated</b> to 940-1050.degree., and the <b>cast</b> part is hardened by slow cooling, <b>heating</b> at 450-600.degree. for 30-90 min, or by nitriding.					

AN 106:22014 HCA  
TI Copper alloys  
IN Yamashita, Masao  
PA Komatsu, Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	JP 61127838	A2	19860616	JP 1984-248820	19841127	
AB	The Cu alloys contain 0.3-10.0 Zr and 0.2-10.0% Pb. The alloys have high m.p. and thermal cond., good fitting with the counterpart, and suitable hardness, and are useful as sliding bearings. Thus, a Cu alloy contg. 3 Zr and 1% Pb was melted, cast, soln. heat treated at 890.degree. for 1 h, and aged at 500.degree. to contain granular pptd. crystals and show Vickers hardness 95. Two Cu alloy plates were simultaneously contacted with a SUT 2 plate (diam. 130 mm), and a sliding test was carried out with an engine oil lubricant to show seizure surface pressure 160 kg/cm <sup>2</sup> , vs. 80 kg/cm <sup>2</sup> for a conventional high-strength brass composed of Cu 63.3, Zn 33.0, Mn 2.3, Pb 0.5, and Si 0.9%.					

AN 104:211446 HCA  
TI High-strength copper alloys having electric conductivity  
IN Miyashita, Hirohito; Kamio, Morinori; Tsuji, Masahiro  
PA Nippon Mining Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	JP 60245752	A2	19851205	JP 1984-101722	19840522	
AB	The elec. conductive Cu alloys contain Sn 0.8-4.0, P 0.01-0.4, Fe 0.05-1.0, and .gtoreq.1 of Al, Hf, Be, Mo, Te, Pb, Co, Zr, Nb, B, Mg, Mn, Si, Sb, Ti, In, and/or As 0.01-1.0, with O impurity .ltoreq.0.0020%. The alloys have a high thermal cond., heat resistance, workability, coating adhesion, and corrosion resistance, and they are useful for lead frames of semiconductor devices or conductive spring parts. Thus, Cu alloy contg. Sn 1.0, P 0.04, Fe 0.08, Al 0.10, Hf 0.10, and O 0.0012% was induction melted, cast, and hot-rolled at 800.degree. into plate 4 mm thick. The plate was surface ground, cold-rolled into a sheet 1.0 mm thick, annealed at 500.degree., and cold-rolled into a sheet 0.8 mm thick. Elec. cond. of sheet was 39% IACS, tensile strength 42.4 kg/mm <sup>2</sup> , elongation 11%, and softening point 460.degree.. The sheet showed a good solderability, and no blistering after coating with Ag 3.mu. thick.					

AN 90:173115 HCA  
TI Fine **copper** alloy wire for electric conductor  
IN Komata, Kenichi; Inoue, Sadao; Uno, Naoki  
PA Furukawa Electric Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53140223	A2	19781207	JP 1977-55049	19770513
	JP 60049706	B4	19851105		

AB **Cast Cu** contg. 0.006-0.1% **Pb** is hot rolled,  
**heated** to 800-950.degree., water quenched, and drawn to  
.1toreq.0.2 mm wire. Thus, a 50 kg ingot of **Cu-0.07%Pb**  
[70047-52-8] was hot rolled at 850.degree. to 8 mm diam.,  
water-quenched, pickled, drawn to 2 mm, **heated** at 450.degree. in  
Ar, drawn to 0.08 mm, and annealed 2 h at 450.degree. in Ar. Two drawing  
breaks occurred in 40 kg of alloy, and the elec. cond. was 98.1% IACS,  
compared to 16 and 96.5% for **Cu-0.15% Pb**.

AN 127:22028 HCA  
TI Copper alloys for electronic apparatus and their manufacture  
IN Eguchi, Tatsuhiko; Hirai, Takao; Miyauchi, Michio  
PA Furukawa Electric Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 9 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09078162	A2	19970325	JP 1996-2768	19960111

PRAI JP 1995-173700 19950710

AB The title Cu alloys contain Cr 0.1-0.4, Sn 0.05-2, Zn 0.05-2,  
**Pb** and/or Ca total 0.005-0.2, P < 0.01, S < 0.005 and O<sub>2</sub> < 0.005%;  
size of crystd. or pptd. substances < 3 .mu.m, and grain size < 5 .mu.m.  
Optionally, the Cu alloys may also contain Zr 0.01-0.2%. The  
Cu alloys for electronic app. are manufd. by casting the  
above stated Cu alloys at cooling speed .gtoreq. 5.degree./s,  
hot working at 850-1000.degree., cooling at cooling speed .gtoreq.  
10.degree./s, cold working at draft .gtoreq. 80%, heat treating at  
400-500.degree. for 10 min to 24 h, cold working at draft .ltoreq. 50%,  
and final heat treating at 300-600.degree. for 10 min to 12 h in order.  
The Cu alloys have good strength, elec. cond., solderability,  
and punchability.

AN 105:83772 HCA  
TI High-conductivity **copper** alloys having heat resistance and high strength  
IN Shimizu, Sajiro; Fukuda, Takatoki; Nishiura, Sakiya; Imamura, Tatsuo;  
Kato, Masanori; Tanaka, Kanji  
PA Tatsuta Electric Wire and Cable Co., Ltd., Japan; Nippon Mining Co., Ltd.  
SO Jpn. Kokai Tokkyo Koho, 4 pp.  
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61076636	A2	19860419	JP 1984-198101	19840920
	JP 62056218	B4	19871125		

AB Dil. Cu alloys contain Fe 0.02-1, P to give P/Fe wt. ratio of 0.15-0.18, and .gtoreq.1 of In .gtoreq.0.006, Sn .ltoreq.0.006, Pb .ltoreq.0.006, and Sb .ltoreq.0.006% for a total of 0.01-0.5%. The alloys

are useful for elec. conductors in electronic equip., and for cables in industrial robots. Thus, molten Cu alloy contg. Fe 0.12, P 0.03, In 0.008, and Sn 0.003% was cast in a C mold to give ingot of 130 mm diam. The ingot was sectioned, trimmed, hot-extruded at 900.degree., and quenched in water to give a rod of 11 mm diam. The rod was cold-drawn into wire of 0.13 mm diam. The wire annealed 1 h at 450.degree. showed reversed bending 39 times, and had tensile strength

11% and elec. cond. 89% of IACS.

AN 90:173115 HCA  
TI Fine **copper** alloy wire for electric conductor  
IN Komata, Kenichi; Inoue, Sadao; Uno, Naoki  
PA Furukawa Electric Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 3 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 53140223	A2	19781207	JP 1977-55049	19770513
	JP 60049706	B4	19851105		

AB Cast **Cu** contg. 0.006-0.1% **Pb** is hot rolled,  
heated to 800-950.degree., water quenched, and drawn to .1toreq.0.2 mm  
wire. Thus, a 50 kg ingot of **Cu**-0.07%**Pb** [  
**70047-52-8**] was hot rolled at 850.degree. to 8 mm diam.,  
water-quenched, pickled, drawn to 2 mm, heated at 450.degree. in Ar,  
drawn  
to 0.08 mm, and annealed 2 h at 450.degree. in Ar. Two drawing breaks  
occurred in 40 kg of alloy, and the elec. cond. was 98.1% IACS, compared  
to 16 and 96.5% for **Cu**-0.15% **Pb**.

OPER	DBP	ENTERED	2/2/2000	MODIFIED	5/14/2001	ATTORNEYS	PF	/ AAA	/ PPP	/ RAB	PRINTED ON:	5/18/2001
Darby#	0G684US0	CNTRY	US	UNITED STATES		NEW/CON	NEW	RELATED				
PATS#	P0G684US0	TYPE	UTL	SERIAL#	09/499,207	PATENT#		STAT	PENDING			
TITLE	MANUFACTURE OF COPPER MICROALLOYS										SL	RAB
CLIENT	2136	Casa L Duran Corretjer			1	CREF	5.276/AH	SE	yes	SLDT	05/14/01	
AGENT					AREF		CLAIMS		ACCT			
PRIOR	2/8/1999	MAIL	2/7/2000	FILE	2/7/2000	PUBL	ISSUE	EXP	2/7/2020	1ST	2/7/2000	

ID	O	ACTION	BASE	DUE IN	DUE	EXTNS	FINAL	EXT	RESPONSE	CALL	1	2	P
PR	Y	PRELIM AMENDMENT	2/7/2000										
SE	Y	SMALL ENTITY STMT	2/7/2000										
US	N	U.S. FILING DUE	2/8/1999	12 M	2/8/2000		2/8/2000	0	2/7/2000	1 M	Y	Y	N
SPEC. DECL. (1) SHT INFML DWG, SES, ASSIG.													
DS	N	INF DISCLOSURE STMT	2/7/2000	3 M	5/7/2000	0	5/7/2000	0		1 M	Y	Y	N
CT	N	FILE RCT TO CORRECT	5/5/2000	14 D	5/19/2000		5/19/2000	0	6/20/2000	0 M	N	N	N
CF	Y	CORRECT OF FLG RCPT	6/20/2000										
PD	Y	PRIORITY DOCUMENT	8/11/2000										
PR	Y	PRELIM AMENDMENT	8/17/2000										
VV	N	PETITION TO REVIVE	5/7/2001	0 M	5/7/2001		5/7/2001	0		0 M	Y	Y	N
SC	N	STATUS CHECK	2/7/2000	18 M	8/7/2001	0	8/7/2001	0		1 M	N	N	N
OA	N	OWNER AMEND. PENDING	2/7/2000	60 M	2/7/2005		2/7/2005	0	2/7/2000	0 M	N	N	Y
R/F 10555/0225 BARCELONA, SPAIN													

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Esparducer Broco, Araceli;
Segarra Rubik, Merce;
Chimenos Ribera, Josep Ma

ASSIGNEES
La Farga Lacambra, S.A.

AN 2002:468201 HCAPLUS  
DN 137:9429  
TI Microalloying of **copper** with **lead** for ingot casting  
IN Guixa Arderiu, Jose Oriol; Garcia Zamora, Miquel; Espiel Alvarez, Ferran;  
Fernandez Lopez, Miquel Angel; Esparducer Broco, Araceli; Segarra Rubik,  
Merce; Chimenos Ribera, Josep Maria  
PA La Farga Lacambra, S.A., Spain  
SO Span., 8 pp.  
CODEN: SPXXAD  
DT Patent  
LA Spanish  
FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	ES 2160473	A1	20011101	ES 1999-254	19990208
	ES 2160473	B1	20020616		
PRAI	ES 1999-254		19990208		

AB Molten Cu for ingot casting is microalloyed with >200 ppm (esp. .ltoreq.500 ppm) Pb in the presence of minor (esp. 10-80 ppm) S, Se, As, Bi, Sn, Zn, Ni, Fe, Ag, and/or Te. The microalloyed cast Cu shows decreased temp. of recrystn., and increased elec. cond.